Improving Accessibility to Medical Services for Persons with Disabilities in Thailand

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ABSTRACT

Purpose: *This action research aimed at developing an action plan to improve the accessibility to home health care and assistive devices for persons with disabilities in a rural community, and to evaluate changes in the numbers of such persons who received appropriate home health care and assistive devices after a three-month implementation of the action plan.*

Method: *The study was conducted at a sub-district of Maha Sarakham Province, Thailand. The main beneficiaries were 99 persons with disabilities (mean age 55.4±18.7 years). Group meetings were organised for persons with disabilities, caregivers, and various community members. An action plan for improving the accessibility of persons with disabilities to home health care and assistive devices was collaboratively formulated and implemented for three months.*

Results: *The main strategy for improving accessibility was to increase the competency of village health volunteers in providing home health care and assistive devices to persons with disabilities. After the three-month action plan implementation, the number of persons with disabilities who received appropriate home health care, i.e. at least once a month, significantly increased from 33.3% to 72.2% (Chi-square test, P<0.01, 95% CI 18.5 to 59.3). The number of persons who received assistive devices suited to their disabilities also significantly increased from 33.3% to 58.3% (Chi-square test, P=0.03, 95% CI 3.5 to 46.5).*

Conclusions: *Under the supervision of physical therapists and/or other allied health professionals, the village health volunteer is likely to be a key person for improving the accessibility to home health care and assistive devices for persons with disabilities in a rural community.*

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Limitations: *The study was limited to only one sub-district. No comparable areas were studied. Further, since the study recruited persons with disabilities from a rural community, applicability of the findings to persons with disabilities in an urban community should be considered judiciously.*

Key words: *Home health care, Assistive devices, Village health volunteers, Rural community*

INTRODUCTION

At present, the number of persons with disabilities in Thailand has been estimated at 1.1 million (1.7%) of the total population (National Office for Empowerment of Persons with Disability, 2011). Most of them live in rural areas, face problems such as poverty and discrimination, and are left behind in the development process. Although a National Act for persons with disabilities, enacted in 2007, has aimed to promote and develop their quality of life, only a minority receive accessible and appropriate rehabilitation services.

Kosum Phisai Hospital is one of community hospitals of Maha Sarakham Province, in north-eastern Thailand. One of the hospital's missions is to provide health services to persons with disabilities. Most of these health services have been organised by the hospital's physical therapists in collaboration with other health personnel. Although the hospital has made the effort to provide the best services, persons with disabilities have complaints about their accessibility to medical services, including home health care and assistive devices. Continuing and frequent home health care by health personnel seems to be in great demand.

In the 1970s and the early 1980s, community-based rehabilitation (CBR) emerged as an alternative strategy to deal with disability issues (Thomas & Thomas, 1999). It has been promoted as an approach suitable for developing countries with limited resources (Stuelz, 1999; Lopez et al, 2000). CBR emphasises the importance of the participation of persons with disabilities and their community, and collaboration between sectors that provide the services used by persons with disabilities (Thomas & Thomas, 2003). Theoretically understood, the community should be involved in the planning, decision making, and evaluation of CBR programmes (Sharma, 2007). Community participation has been shown as an important factor of social strength, to combat social problems such as illicit drug use in young people (Daenseekaew et al, 2005).

Hence, the researchers were interested in the CBR approach. An action research, based on the community-participation concept of CBR, was thus conducted to improve the accessibility to medical services (i.e. home health care and assistive devices) for persons with disabilities in Nong Bon sub-district, Kosum Phisai District, Maha Sarakham Province. This sub-district was selected as a study area due to the presence of a large number of persons with disabilities (129 of them or 2.2% of the total population), and the positive attitudes of the sub-district administrative organisation towards persons with disabilities.

OBJECTIVES

The research consisted of two parts: designing an action plan and implementing it. The main objectives of the study were to (i) develop an action plan for improving the accessibility to home health care and assistive devices for persons with disabilities and (ii) evaluate changes in the numbers of persons with disabilities who received appropriate home health care and assistive devices after implementing the action plan for three months. Appropriate home health care and assistive devices were defined in this study as the provisions of home health care at least once a month and assistive devices which were suitable for the disabilities, respectively.

METHOD

The study was conducted from October 2009 until October 2010. It was divided into three phases: analysing the situation of accessibility to home health care and assistive devices for persons with disabilities; designing an action plan for improving their accessibility; and implementing the action plan, as well as evaluating the outcomes. All procedures were approved by The Khon Kaen University Ethics Committee for Human Research.

Phase 1: Analysing the Situation

This phase lasted from October 2009 up to January 2010. Database of 129 persons with disabilities in Nong Bon sub-district was gathered from the Nong Bon SAO sub-district administrative organisation as well as Kosum Phisai Hospital. Using a screening form designed by the researchers, the persons with disabilities were interviewed at their residences by the second researcher and/or a research assistant, regarding their demographic characteristics, classification and duration of disability, ability to perform daily life and outdoor activities (Sriprachya-anunt,

1995), and services of home health care and assistive devices received during the previous six months. Data were analysed using descriptive statistics.

Based on the screening form, persons with disabilities who met the following criteria were asked to participate in other procedures of the study: 1) those persons with physical impairments who required partial or total help to perform activities in daily life, and who had received home health care less than once a month during the previous six months, or those persons with any disabilities who lacked appropriate assistive devices, 2) those able to communicate verbally or non-verbally by themselves or their caregivers, and 3) those willing to participate and cooperate with the study procedures. Some of the eligible persons with disabilities, whose decisive actions and leadership qualities were recognised, were specifically invited to participate in the process of designing an action plan. Participants were excluded if they had to be hospitalised during the study period.

Phase 2: Designing an Action Plan

The second phase was conducted from February up to early July, 2010. The second researcher arranged several informal and small group meetings for village health volunteers, members of the Nong Bon sub-district administrative organisation, community leaders, and health personnel of the primary care unit. The purpose of these meetings was to mobilise and raise awareness within the community about persons with disabilities. Thereafter, the researchers organised a three-hour formal group meeting for persons with disabilities, caregivers, and those sub-district members as well as relevant health personnel from Kosum Phisai Hospital. The group was informed about data obtained from Phase 1. The current situation concerning persons with disabilities was analysed, and the group members were encouraged to discuss the former's problems, as well as barriers of accessibility to home health care and assistive devices. After the problems were prioritised, the group members formulated an action plan. During this meeting, the researchers acted as facilitators and took notes, to group the obtained data into meaningful phrases or words. Finally, comprehensive tables and/or figures were drawn by the group members and the researchers, for greater clarity in understanding the action plan to improve the accessibility to home health care and assistive devices for persons with disabilities.

Phase 3: Implementing and Evaluating

This phase lasted from mid-July up to October, 2010. Before implementing the action plan, the research assistant conducted the pre-implementation assessment

at the participants' residences. Two structured interview forms designed by the researchers were used to gather two outcome measures: the participants' accessibility to home health care and assistive devices, and their satisfaction with medical services. Details of home health care as well as assistive devices which they received during the previous three months were considered. The numbers of persons with disabilities who received home health care at least once a month and those who received appropriate assistive devices were evaluated. Before commencing with the data collection, the forms were examined for their content validity, including clarification and relevance in presenting the topic of interest, by two experts who had community experience in dealing with persons with disabilities. The research assistant was trained by the second researcher, to administer the forms to five persons with disabilities who were not involved in the current study.

Thereafter, the action plan derived from Phase 2 was implemented for three months by relevant sectors of the community. The second researcher visited the study area twice a month to observe the activities, to encourage the Nong Bon sub-district administrative organisation, community leaders, village health volunteers, and health personnel to keep processing the action plan, and to offer any necessary advice and help.

On completion of the three-month action plan implementation, the research assistant performed the post-implementation assessment in which the same outcome measures were used.

Changes in the participants' accessibility to home health care and assistive devices, following the three-month action plan implementation, were determined by an increase in the number of participants who received home health care at least once a month and/or assistive devices suitable for their disabilities. The goal for success was set at 80% of the number of participants. Comparisons of such data between pre- and post-implementation assessments were analysed through the Chi-square tests. The participants' satisfaction with the services of home health care and/or assistive devices was determined by comparing pre- and post-implementation scores using the Wilcoxon Signed Rank tests. Normality of the data set was assessed using the Shaprio-Wilk W test. All analyses were performed using the STATA statistical software package version 10.0. A value of $P<0.05$ was used to decide the significance for all analyses.

RESULTS

Phase 1: Situation regarding the Accessibility to Home Health Care and Assistive Devices of Persons with Disabilities

Of the 129 persons with disabilities in Nong Bon sub-district, 99 (76.8%) were interviewed. Thirty persons with disabilities were excluded: 5 lost contact, 10 were not willing to participate, and 15 passed away.

Table 1 outlines the demographic characteristics of 99 persons with disabilities. More than half of them (54.5%) had physical or locomotion impairments. Thirty-seven persons with disabilities (37.3%) required partial or total help from another person, to perform activities in daily life. During the past six months, only 34 persons with disabilities (34.3%) had received monthly home health care, which was mostly a short visit by village health volunteers. Forty-one persons with disabilities (41.4%) either lacked assistive devices or received devices which were not suitable for their disabilities.

Table 1: Demographic characteristics of interviewed persons with disabilities (n=99)

Age (years) (mean±SD)	55.4±18.7
Female : Male (n)	42 : 57
Classification of disability (n (%))	
vision	9 (9.1)
hearing or communication	17 (17.2)
physical or locomotion	48 (48.5)
mental or behaviour	6 (6.1)
intellectual or learning	12 (12.1)
vision + hearing	1 (1.0)
physical + vision	4 (4.0)
physical + vision + hearing	1 (1.0)
physical + hearing + intellectual	1 (1.0)
Duration of disability (years)	
mean±SD	18.8±17.4
max / min	79 / 2

Ability to perform daily life and outdoor activities* (n (%))	
level 1	4 (4.0)
level 2	12 (12.1)
level 3	21 (21.2)
level 4	27 (27.3)
level 5	35 (35.4)
Receiving home health care during the previous 6 months (n (%))	
none	18 (18.2)
every 3 months	38 (38.4)
every 2 months	9 (9.1)
once a month	34 (34.3)
Lack of appropriate assistive devices (N (%))	
visual aids	4 (4.0)
hearing aids	10 (10.1)
ambulatory aids	27 (27.3)

* Ability to perform daily life and outdoor activities: level 1 = total dependence, level 2 = need moderate help, level 3 = need minimal help, level 4 = independent activities in daily life but can perform outdoor activities only within appropriate facilities for persons with disabilities, level 5 = total independence

Of the 99 persons with disabilities who were interviewed, 50 (50.5%) met the inclusion criteria and were willing to participate in the study. They were 21 women and 29 men, with an average age and duration of disability of 57.7±18.4 and 16.8±15.2 years, respectively. Thirty-four persons with disabilities (68%) had physical or locomotion impairments. Most of them (82%) lacked assistive devices or received devices which were not suitable for their disabilities. About 44% did not receive appropriate home health care.

Phase 2: An Action Plan for Improving the Accessibility to Home Health Care and Assistive Devices

A three-hour formal group meeting was held at Kosum Phisai Hospital, with 20 group members including representatives of persons with visual and physical impairments, caregivers of persons with hearing and intellectual impairments, village health volunteers, members of the Nong Bon sub-district administrative organisation, sub-district headmen, and health personnel from both the primary

care unit and Kosum Phisai Hospital. The researchers created an atmosphere conducive to open dialogue. Table 2 presents opinions expressed by the group members regarding the services of home health care and assistive devices for persons with disabilities in Nong Bon sub-district.

Table 2: Expression from the group meeting regarding home health care and assistive devices for persons with disabilities

Group members	Expression
Persons with disabilities and caregivers	1) Need regular physical rehabilitation. 2) Need appropriate assistive devices
The sub-district administrative organisation and sub-district headmen	1) Do not know how to help persons with disabilities regarding home health care and assistive devices.
Village health volunteers	1) Occasionally visit some persons with disabilities but do not know how to rehabilitate them. 2) Do not know how to help persons with disabilities to obtain assistive devices. 3) Do not know how to evaluate whether the persons with disabilities' assistive devices are appropriate.
Nurses from primary care unit and Kosum Phisai Hospital	1) Do not have time to provide regular home visits to persons with disabilities. 2) Perceive that physical therapist is responsible for persons with disabilities.

From the group meeting, the main strategy to improve the accessibility to medical services for persons with disabilities was identified, i.e. to increase the competency of village health volunteers in providing home health care and assistive devices to persons with disabilities. It was felt that volunteers equipped with greater

knowledge and skills relevant to persons with disabilities, would be capable of providing more efficient services. To achieve this, the roles of each sector in the community were identified and presented as a comprehensive model of the action plan in Figure 1. A set of activities was then designed. First, guidelines for providing home health care and assistive devices to persons with disabilities, and an instruction manual for village health volunteers were developed by physical therapists in cooperation with community nurses. Second, three training courses for village health volunteers were organised. Finally, the implementation of the action plan for three months, by volunteers and other community sectors, was facilitated.

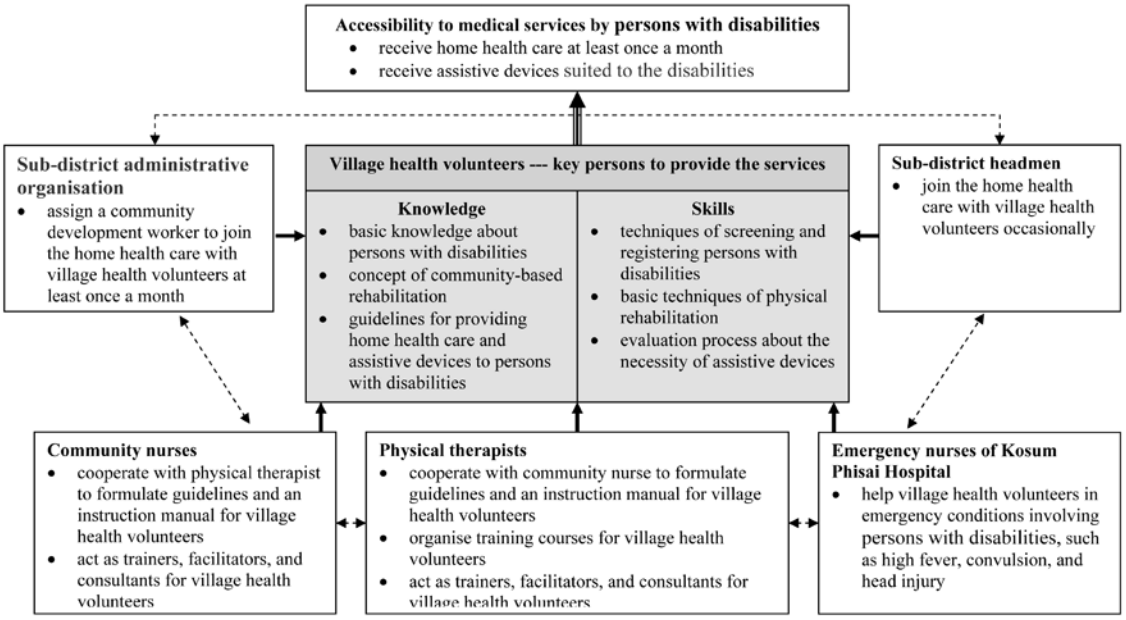

Figure 1 The action plan identifying roles of each sector in Nong Bon sub-district for improving the accessibility to home health care and assistive devices for persons with disabilities

Phase 3: Changes in Outcome Measures

Of the 50 persons with disabilities eligible for inclusion in the study, 8 persons were excluded: 6 declined to cooperate during the phase of implementation and evaluation of the outcomes, and 2 passed away. However, while 42 persons with disabilities participated in the pre-implementation assessment, only 36 persons

completed the study. Six participants dropped out: 2 were hospitalised, and 4 passed away. Demographic characteristics of participants attending pre- and post-implementation assessments are described in Table 3.

Table 3: Demographic characteristics of participants attending pre-and post-implementation assessments

Demographic characteristics	**Pre-implementation** (n=42)	**Post-implementation** (n=36)
Age (years) (mean±SD)	58.2±19	58.7±19
Female : Male (n)	18 : 24	16 : 20
Classification of disability (n (%))		
vision	5 (11.9)	4 (11.1)
hearing or communication	6 (14.3)	6 (16.7)
physical or locomotion	25 (59.5)	23 (63.9)
intellectual or learning	2 (4.8)	1 (2.8)
physical + vision	3 (7.1)	2 (5.6)
physical + hearing + intellectual	1 (2.3)	0
Duration of disability (years)		
mean±SD	17.0±15	17.1±15
max	57	57
min	2	2

After implementing the action plan for three months, the number of persons with disabilities who received appropriate home health care, i.e. at least once a month, significantly increased from 33.3% to 72.2% (Chi-square test, $P<0.01$, 95% CI 18.5 to 59.3) (Table 4). The number of persons who received assistive devices suited to their disabilities also significantly increased from 33.3% to 58.3% (Chi-square test, $P=0.03$, 95% CI 3.5 to 46.5) (Table 4). Another significant finding demonstrated in Table 4 was a decrease in the number of persons with disabilities who had not yet received or had received inappropriate assistive devices, after implementing the three-month action plan (Chi-square test, $P=0.01$, 95% CI -49.9 to -7.3).

Table 4: Comparisons of home health care and assistive devices provided to persons with disabilities between pre-and post-implementation assessments (P-values obtained through the Chi-square tests)

Medical services	Pre-implementation (n=42) (n (%))	Post-implementation (n=36) (n (%))	Mean difference (95% CI)	P-value
Home health care received during the previous 3 months*				
Appropriate	14 (33.3)	26 (72.2)	38.9 (18.5, 59.3)	<0.01
Inappropriate	28 (66.7)	10 (27.8)		
Assistive devices presently received				
Not necessary to use	2 (4.8)	3 (8.3)	3.6 (-7.5, 14.7)	0.52
Already received and appropriate	14 (33.3)	21 (58.3)	25.0 (3.5, 46.5)	0.03
Necessary to use but not yet received, or already received but inappropriate	26 (61.9)	12 (33.4)	-28.6 (-49.9, -7.3)	0.01

* Appropriate home health care was the provision of home health care at least once a month.

Table 5 shows the participants' satisfaction with the services of home health care and/or assistive devices at pre- and post-implementation assessments. After the three-month action plan implementation, there was no significant change in their satisfaction with the services.

Table 5: Mean±SD (median) of satisfaction with the services of home health care and/or assistive devices at pre-and post-implementation assessments (P-values obtained through the Wilcoxon Signed Rank tests)

	Items	Pre-implem-entation (n=42)	Post-implem-entation (n=36)	P-value
1)	The services of home health care and/or assistive devices were consistent with your needs.	4.0±1.2 (4)	4.2±0.7 (4)	0.60
2)	Information about rehabilitation provided by health personnel was practical.	4.0±1.1 (4)	4.2±0.7 (4)	0.44
3)	Health personnel showed you their service-mind.	4.1±1.3 (5)	4.2±0.7 (4)	0.89
4)	Duration of rehabilitation provided by health personnel was relevant to your disability.	4.0±1.0 (4)	4.1±0.7 (4)	0.93
5)	Health personnel informed you about human rights and laws regarding persons with disabilities.	3.6±1.6 (4)	4.2±0.7 (4)	0.06
6)	Home health care and/or assistive devices provided by health personnel were suitable for your disabilities.	4.2±1.2 (5)	4.2±0.7 (4)	0.69
7)	Home health care and/or assistive devices provided by health personnel were useful for your activities in daily life.	4.1±1.0 (4)	4.2±0.8 (4)	0.85
8)	Home health care and/or assistive devices provided by health personnel could empower you.	4.4±0.9 (5)	4.2±0.9 (4)	0.09
9)	Home health care and/or assistive devices provided by health personnel were useful for your social integration.	4.0±1.1 (4)	4.2±0.9 (4)	0.57
10)	Overall, how much did the quality of home health care and/or assistive device services satisfy you?	4.1±1.0 (4)	4.1±0.9 (4)	1.00
	Total score (50)	40.5±9.0 (42.5)	41.8±7.4 (40)	0.80

DISCUSSION

The action plan obtained from this study, for improving the accessibility to home health care and assistive devices for persons with disabilities, was based on the community-participation concept of the community-based rehabilitation approach (Thomas & Thomas, 2003; Sharma, 2007). All sectors relating to persons with disabilities in Nong Bon community, including persons with disabilities and caregivers, village health volunteers, the sub-district administrative organisation, sub-district headmen, and local health personnel, were invited to collaboratively design an action plan. At the group meeting, the village health volunteers - official volunteers in communities of Thailand - were entrusted with alleviating the problem of accessibility to home health care and assistive devices for persons with disabilities in Nong Bon sub-district. This finding adds support to the role of village health volunteers towards persons with disabilities in the community (Nuntaboot et al, 2007). However, physical therapists and community nurses had to participate in providing a body of knowledge and skills to strengthen the volunteers' competence. As the study's theme was limited to health issues, it was found that health personnel had to be key persons in solving the problems of persons with disabilities.

After implementing the action plan for three months, the number of persons with disabilities who received home health care at least once a month significantly increased to 72.2%. However, such an increment was less than the study's goal for success which was expected to be 80%. It is possible that the heavy rain and flooding in Nong Bon sub-district during the implementation period, could have been an obstacle to village health volunteers providing monthly home health care to persons with disabilities. In addition, some of the village health volunteers may not have been able to spare much time, as required by the study, as they are usually responsible for a great number of health services in the community.

The number of persons with disabilities who received appropriate assistive devices increased to 58.3%, after the three-month action plan implementation. This was also less than the study's 80% goal for success. The reason could have been deficiency in the guidelines given to village health volunteers. While there were guidelines regarding how to evaluate the need for assistive devices and where to get the devices, no information was provided regarding how to help persons with disabilities access the assistive devices. Thus, at the post-implementation assessment, it was not surprising to find that about one-third of the participants had not yet received assistive devices even though these were required.

After the three-month action plan implementation, the participants did not show a statistically significant change in their satisfaction with the services of home health care and/or assistive devices. During the pre-implementation assessment, it was observed that their satisfaction with the services was already at a high level, which probably resulted in no significant change in the satisfaction scores at the end of the study. However, there was an evident increase in satisfaction on receiving information about human rights and laws concerning persons with disabilities. Having gained more basic knowledge about persons with disabilities from training courses, village health volunteers may then have distributed the information to the participants.

The findings of this study indicated that village health volunteers were key persons in improving the accessibility to home health care and assistive devices for persons with disabilities in a rural community. The action plan derived from the current study could possibly be applied in other communities which have similar contexts and conditions. To reach the optimum goal of the services, however, utilising a group of unofficial community volunteers should be considered, to work along with village health volunteers who already have many duties (Nualnetr, 2009; Nualnetr et al, 2006).

CONCLUSIONS

The study suggests that, under the supervision of physical therapists and/or other allied health professionals such as skill trainers, expert resources and/or programme monitors, the village health volunteer is likely to be a key person in improving the accessibility to home health care and assistive devices for persons with disabilities in a rural community. However, village health volunteer needs to be supported by a group of unofficial community volunteers, in order to reach the optimum goal of the services.

Limitations

Due to limitations of time, the participants in this study were drawn from only one sub-district. No comparable areas were considered. Moreover, since the study recruited persons with disabilities from a rural community, the findings would have limited applicability to the population of persons with disabilities in an urban community. Thus, further studies with a community randomised controlled trial design as well as in urban contexts are recommended. In addition,

a longitudinal study design should be conducted to determine the sustainability of the action plan implementation and its effects.

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REFERENCES

Daenseekaew S, Srisontisuk S, Thongkrajar E, Sriruecha P (2005). Mobilising communities to combat illicit drug use in North-east Thailand. Thai J Nurs Res; 9 (3): 141-154.

Jitngern U, Kongsukwiwat K, Wirakul W (2007). Synthesis of knowledge on community works. Bangkok: U-sa Publishers.

Lopez JM, Lewis JA, Boldy DP (2000). Evaluation of a Philippine community based rehabilitation programme. Asia Pacific J Public Health; 12 (2): 85-89. http://dx.doi.org/10.1177/101053950001200206. PMid:11836924

National Office for Empowerment of Persons with Disability, Ministry of Social Development and Human Security (2011). Database of persons with disability. Retrieved from: http://www.m-society.go.th/document/statistic/statistic, July 2011.

Nualnetr N (2009). Physical therapy roles in community-based rehabilitation: a case study in rural areas of north-eastern Thailand. Asia Pacific Disability Rehabilitation Journal; 20 (1): 73-82.

Nualnetr N, Ninprapan A, Mator L (2006). Community-based rehabilitation in rural area of Khon Kaen Province: a case study at Namphong Sub-district, Namphong District. Khon Kaen: Research and Development Institute, Khon Kaen University.

Nuntaboot K, Jirarattanawanna N, Boonsawatgulchai P, Tangtongkam S, Sarnthima P (2007). A case study of innovation for community health care (north-eastern region): cares for the disadvantaged in community, disease prevention and control by community, health promotion community, health promotion for family. Nonthaburi: Health Systems Research Institute.

Sharma M (2007). Community participation in community-based rehabilitation programmes. Asia Pacific Disability Rehabilitation Journal; 18 (2): 146-157.

Sriprachya-anunt S (1995). Medical rehabilitation manual for physician about the prevention and rehabilitation services for persons with disability. Bangkok: War Veterans Organisation of Thailand Printing.

Stuelz A (1999). Community-based rehabilitation in Lao: comparison of needs and services. Disability and Rehabilitation; 21 (10-11): 508-514. http://dx.doi.org/10.1080/096382899297341

Thomas M, Thomas MJ (1999). A discussion on the shifts and changes in community-based rehabilitation in the last decade. Neurorehabil Neural Repair; 13: 185-189. DOI: 10.1177/154596839901300308. http://dx.doi.org/10.1177/154596839901300308

Thomas M, Thomas MJ (2003). Manual for CBR planners. Bangalore: National Printing Press.